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Generic type vehicle braking system with electronic control - has simulator spring which can be compressed during brake boosting mode, with electrically controllable valve arrangement which is connected to pressure line

Patent Assignee: BOSCH GMBH ROBERT

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Patent Family

Patent Number	Kind	Date	Application Number	Kind	Date	Week	Type
GB 2292590	A	19960228	GB 9516523	A	19950811	199612	B
DE 4430168	A1	19960229	DE 4430168	A	19940825	199614	
JP 8067242	A	19960312	JP 95217603	A	19950825	199620	
US 5531509	A	19960702	US 95465471	A	19950605	199632	
GB 2292590	B	19960724	GB 9516523	A	19950811	199633	

Priority Applications (Number Kind Date): DE 4430168 A (19940825)

Patent Details

Patent	Kind	Language	Page	Main IPC	Filing Notes
GB 2292590	A		26	B60T-013/68	
DE 4430168	A1		11	B60T-013/16	
JP 8067242	A		10	B60T-013/66	
US 5531509	A		11	B60T-011/20	
GB 2292590	B		1	B60T-013/68	

Abstract:

GB 2292590 A

The system includes a pump and valve device, and a pressure line for producing boosting pressure for booster chamber for hydraulically displacing booster piston. This is followed when brake pedal displaced booster piston, in case where energy source fails. A travel simulator is arranged between brake pedal and booster piston.

The simulator has a simulator spring which can be compressed during brake boosting mode, with an electrically controllable valve arrangement which is connected to pressure line. A return line from pressure line leads to reservoir.

USE/ADVANTAGE - In vehicle braking system. Exclusion damage due to overheating.

Dwg.1/4

GB 2292590 B

A vehicle brake system comprising a main cylinder for supplying wheel brake cylinders with brake pressure, a hydraulic brake booster which is assigned to the main cylinder for activating it and which has a booster piston which can be displaced in a booster chamber in the direction of the main cylinder, a hydraulic energy source which has a reservoir, a pump and valve means and a pressure line for producing boosting pressure for the booster chamber for hydraulically displacing the booster piston, a brake pedal for emergency displacement of the booster piston when the energy source fails, a travel simulator which is arranged between the brake pedal and the booster piston and which has a simulator spring which can be compressed during brake boosting mode, an electrically controllable valve arrangement, which is connected to the pressure line and from which a return line leads to the reservoir, for adjusting boosting pressure in the booster chamber, a sensor which can be adjusted by means of the brake pedal in order to output an electronic signal variable as a function of the activation of the brake pedal, and an electronic control unit which is connected to the sensor in order to produce an output signal in dependence on the sensor signal for controlling the valve arrangement electrically when the brake pedal is activated, wherein the valve arrangement is constructed as a throttle valve which normally has its widest flow area and the booster chamber is permanently connected to the pressure line.

Dwg.1

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POWERED BY **Dialog****Hydraulically operated braking system e.g. for vehicle****Patent Assignee:** TOYOTA JIDOSHA KK**Inventors:** ISONO H; MIZUTANI Y**Patent Family**

Patent Number	Kind	Date	Application Number	Kind	Date	Week	Type
EP 950593	A2	19991020	EP 99106961	A	19990408	199949	B
JP 2000203413	A	20000725	JP 98364575	A	19981222	200040	
KR 99083250	A	19991125	KR 9913537	A	19990416	200055	

Priority Applications (Number Kind Date): JP 98364575 A (19981222); JP 98107517 A (19980417); JP 98320247 A (19981111)

Patent Details

Patent	Kind	Language	Page	Main IPC	Filing Notes
EP 950593	A2	E	67	B60T-011/00	
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JP 2000203413	A		36	B60T-013/18	
KR 99083250	A			B60T-013/74	

Abstract:

EP 950593 A2

NOVELTY The system has a brake operating member (10) operable by an operator. A master cylinder (12,300,500,600) includes a pressurizing piston (34,322,324,504, 506) operatively connected to the brake operates member and partially defines a pressurizing chamber (30, 32,302,304,508,510), the pressurizing piston is moved by the brake operating member to pressurize a fluid in the pressurizing chamber.

DETAILED DESCRIPTION A brake cylinder (22-28) actuated by the pressurized fluid received from the master cylinder. An assisting device (81,260-272,109,538,612) for applying to the pressurizing piston an assisting drive force which is different than a primary drive force to be applied to the pressurizing piston on the basis of a brake operating force acting on the brake operates member, the assisting device is electrically controllable to control the assisting drive force.

USE For vehicle.

ADVANTAGE produces assisting force in non proportional relationship with brake operating force.

DESCRIPTION OF DRAWING(S) The figure shows a circuit diagram showing a hydraulically operated braking system constructed according to a first embodiment of the invention.

Brake operating member (10)

Master cylinder (12,300,500,600)

Brake cylinder (22-28)

Pressurizing chamber (30, 32,302,304,508,510)

Pressurizing piston (34,322,324,504, 506)

Assisting device (81,260-272,109,538,612)

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